

Analytical Biochemistry

An International Journal

UNIVERSITY OF HAWAII LIBRARY

EDITOR: *Alvin Nason*

LIBRARY USE ONLY

ADVISORY BOARD:

<i>Fry Ackers</i>	<i>Harlyn O. Halvorson</i>	<i>Kazuo Okunuki</i>
<i>Norman G. Anderson</i>	<i>William Z. Hassid</i>	<i>Alexander Rich</i>
<i>Eraldo Antonini</i>	<i>Osamu Hayaishi</i>	<i>Gerhard Schmidt</i>
<i>Gilbert Ashwell</i>	<i>Edward C. Heath</i>	<i>Michael Sela</i>
<i>Samuel P. Bessman</i>	<i>C. H. W. Hirs</i>	<i>Herbert A. Sober</i>
<i>Simon Black</i>	<i>Evan C. Horning</i>	<i>Sol Spiegelman</i>
<i>Robert M. Bock</i>	<i>Rollin D. Hotchkiss</i>	<i>Paul K. Stumpf</i>
<i>Robert L. Bowman</i>	<i>Walter L. Hughes</i>	<i>Charles A. Thomas, Jr.</i>
<i>Ludwig Brand</i>	<i>Ephraim Katchalski</i>	<i>Sidney Udenfriend</i>
<i>A. E. Braunstein</i>	<i>Irving Klotz</i>	<i>Bert L. Vallee</i>
<i>Melvin Calvin</i>	<i>Luis F. Leloir</i>	<i>Donald D. Van Slyke</i>
<i>Andreas Chrambach</i>	<i>Olov Lindberg</i>	<i>Samuel B. Weiss</i>
<i>Sidney Colowick</i>	<i>Feodor Lynen</i>	<i>Theodor Wieland</i>
<i>Frank Eisenberg, Jr.</i>	<i>Vincent Massey</i>	<i>George Wolf</i>
<i>Jacques R. Fresco</i>	<i>Manfred M. Mayer</i>	<i>W. A. Wood</i>
<i>Victor Ginsburg</i>	<i>Bruce Merrifield</i>	<i>Lemuel D. Wright</i>
<i>I. C. Gunsalus</i>	<i>Marshall Nirenberg</i>	<i>David A. Yphantis</i>

VOLUME 41

1971

ACADEMIC PRESS
New York and London



Copyright ©, 1971, by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, by retrieval system, or any other means, without written permission from the Publishers.

Made in the United States of America

CONTENTS OF VOLUME 41

NUMBER 1, MAY 1971

A. H. REISNER AND JANET ROWE. Modification of the Photoelectric Scanner of the Analytical Ultracentrifuge for Schlieren Analysis	1
F. SALVATORE, R. UTILI, V. ZAPPIA, AND S. K. SHAPIRO. Quantitative Analysis of <i>S</i> -Adenosylmethionine and <i>S</i> -Adenosylhomocysteine in Animal Tissues	16
NICHOLAS M. ALEXANDER AND JAMES L. BOYER. A Rapid Assay for the Glyoxalase Enzyme System	29
JAMES L. SUDMEIER AND JOSEPH J. PESEK. ³⁵ Cl Nuclear Magnetic Resonance Studies of Metal Binding to Bovine Serum Albumin	39
JOHN L. COUCH AND PHILIP C. HANAWALT. Analysis of 5-Bromouracil Distribution in Partially Substituted Deoxyribonucleic Acids	51
JONATHAN J. GOLDTHWAITE AND LAWRENCE BOGORAD. A One-Step Method for the Isolation and Determination of Leaf Ribulose-1,5-diphosphate Carboxylase	57
ERLAND WESSLER. Electrophoresis of Acidic Glycosaminoglycans in Hydrochloric Acid: A Micro Method for Sulfate Determination	67
P. G. DEVAUX, M. G. HORNING, R. M. HILL, AND E. C. HORNING. <i>O</i> -Benzyloximes: Derivatives for the Study of Ketosteroids by Gas Chromatography. Application to Urinary Steroids of the Newborn Human	70
CARLA WINLUND GRAY AND MICHAEL J. CHAMBERLIN. Measurement of Ligand-Protein Binding Interactions in a Biphasic Aqueous Polymer System	83
LEE ANN ROCH AND SIDNEY E. GROSSBERG. Rapid Fluorometric Micromethod for <i>in Situ</i> Quantitation of Lipids on Thin-layer Chromatograms	105
GARY D. SMALL AND ROBERT B. SPARKS. Isolation of Ultraviolet Light Induced Pyrimidine Dimers from Enzymic Hydrolyzates of DNA	116
M. S. KAULENAS. Rapid Isolation of Insect Ribosomal Subunits by Ethanol-Magnesium Precipitation	126
RALPH L. SOMACK, DAVID H. BING, AND RALPH N. COSTILOW. Preparation and Characterization of 2,4-Diaminovaleric Acid: An Intermediate in the Anaerobic Oxidation of Ornithine	132
DAVID J. COX AND JAMES R. BROWN. Disulfide Interchange Reactions between Cystamine and Cystine Peptides	138

A. D. FRIESEN, J. C. JAMIESON, AND F. E. ASHTON. Effect of Non-ionic Detergent on Fractionation of Proteins by Isoelectric Focusing	149
LYNN S. BATES. Internal Standards for Basic Amino Acid Analyses	158
DAVID H. STRUMEYER AND BRADFORD R. FISHER. An Easily Constructed Event Marker	162
SHELBY KASHKET. An Automated Method for Analysis of Free Fatty Acids	166
ROBERT B. ARONSON AND DONALD D. VAN SLYKE. Manometric Determination of CO ₂ Combined with Scintillation Counting of C-14	173
E. G. RICHARDS, D. TELLER, AND H. K. SCHACHMAN. Alignment of Schlieren and Rayleigh Optical Systems in the Ultracentrifuge. I. Focusing of the Camera and Cylindrical Lenses	189
E. G. RICHARDS, D. C. TELLER, V. D. HOAGLAND, JR., R. H. HASCHMEYER, AND H. K. SCHACHMAN. Alignment of Schlieren and Rayleigh Optical Systems in the Ultracentrifuge. II. A General Procedure	215
THOMAS G. PRETLOW. Estimation of Experimental Conditions That Permit Cell Separations by Velocity Sedimentation on Isokinetic Gradients of Ficoll in Tissue Culture Medium	248
B. J. BERRIDGE, JR., W. R. CHAO, AND J. H. PETERS. Column Chromatographic Analysis of Tryptophan with the Basic Amino Acids	256

SHORT COMMUNICATIONS

RAJ K. SARIN, GERALD M. CONNELL, AND JOHN A. LINFOOT. Comparison of Spectrofluorometric and Competitive Protein-Binding Methods for the Measurement of Plasma Corticosteroids	265
VOLKER NEUHOFF. Wet Weight Determination in the Lower Milligram Range	270
R. BRUCE, K. SIMS, AND F. N. PITTS, JR. Synthesis and Purification of Succinic Semialdehyde	271
THOMAS A. COLE. Immobilization and Localization of DNA in Cesium Chloride Gradients with Polyacrylamide Gels	274
RHONDA BACON AND RICHARD L. SCHOWEN. Automatic Recording of Pressure-Time Data	277
R. H. HACKMAN AND MARY GOLDBERG. Microchemical Detection of Melanins	279
JOSEPH MACGEE AND BARBARA H. SMITH. Simplified Diethylaminoethylcellulose Chromatography of Ribonucleosides	286

BERTIL BJÖRKLUND. Gradient Elution of Isoelectric Precipitates from a Molecular Sieve Carrier: A Useful Separation Technique for Biologic Components	287
J. T. HERLIHY AND R. A. MURPHY. A Versatile, Inexpensive Microstirrer for Spectrophotometer Cuvets	290

NUMBER 2, JUNE 1971

R. C. VAN DEN BOS, V. C. H. F. DE REGT, AND R. C. BRAND. A Rapid Method for Desalting and Concentrating Oligonucleotide Solutions	293
J. KOWALCZYK, B. STASIŃSKA, AND J. JANICKI. Separation of Some Glycyl Dipeptides with the Amino Acid Analyzer	297
R. DAWSON. A Comparison of Fractionation of Groundnut Proteins by Two Different Methods	305
FRED W. WAGNER AND SARA L. SHEPHERD. Ligand Exchange Amino Acid Analysis: Resolution of Some Amino Sugars and Cysteine Derivatives	314
A. RAMEL, E. HEIMER, S. ROY, AND A. L. NUSSBAUM. Gel Filtration of Acylated Oligonucleotides	323
J. A. BLAIR AND K. J. SAUNDERS. Preparation of 5-Alkyltetrahydrofolic Acids (<i>dl</i> -5-Alkyl-5,6,7,8-tetrahydropteroyl-L-mono-glutamic Acids)	332
RICHARD E. McDOWELL AND JAMES C. COPELAND. Evaluation of Different Scintillation Cocktails for Counting of Tritiated Ribonucleic Acid Separated by Sucrose Gradient Centrifugation	338
P. D. G. DEAN, S. R. WILLETTS, AND J. E. BLANCH. Phosphatases: Applications of New Methods for Their Separation	344
LEWIS D. STEGINK, PAUL D. MEYER, AND ROGER CHALKLEY. Acrylamide Gel Electrophoresis of Hemoglobin Polypeptide Chains	351
T. PETER STEIN, TED W. REID, AND DAVID FAHRNEY. A Useful Spectrophotometric Rate Assay for Pepsin	360
S. H. NEFF AND G. L. MEEKER. A Modified Fixed-Volume Mixer for Extended Sucrose Density Gradients	365
ARNOLD A. WHITE AND TERRY V. ZENSER. Separation of Cyclic 3',5'-Nucleoside Monophosphates from Other Nucleotides on Aluminum Oxide Columns. Application to the Assay of Adenyl Cyclase and Guanyl Cyclase	372
HYUN-JAE LEE, JOHN N. LARUE, AND IRWIN B. WILSON. A Simple Spectrophotometric Assay for Amino Acyl Arylamidases (Naphthylamidases, Aminopeptidases)	397
F. J. BLOOMFIELD AND JOHN M. SCOTT. A Charcoal Assay for Intrinsic Factor Using Membrane Filtration	402

HIROH IKEZAWA, SHOJIRO ASAI, AND HIDEKO ISHIHARA. A New Assay of Esterase Activity Using Gas-Liquid Chromatography	408
JACKSON J. CLEMMONS. Radiorespirometer for the Study of C ¹⁴ -Labeled Substances Administered to Chick Embryos	415
A. N. SHARPE AND M. N. WOODROW. Insoluble Radioactive DNA Complex for Determination of <i>Staphylococcus aureus</i> Deoxyribonuclease Activity	430
THOMAS TAYLOR. Group Separation of Δ^4 -3-Oxosteroids and Δ^5 -3 β -Hydroxysteroids by Chromatography on Digitonin-Silica Thin Layers	435
P. MORITZ AND ROY WADE. The Effect of Nitroarginine on Phenylalanine under Acid Hydrolytic Conditions	446
A. J. MEROLA, K. M. SCOTT, AND G. P. BRIERLEY. A Simple Large Volume Cell Suitable for Multiparameter Measurements in the Aminco-Chance Spectrophotometer	455
ADRIAN DUNN. The Use of Cetyl Trimethylammonium Bromide for the Estimation of the <i>in Vivo</i> Incorporation of Radioactive Precursors into RNA	460
STEPHEN G. MAYHEW AND LARRY G. HOWELL. Chromatography of Proteins on Diethylaminoethyl-cellulose in Concentrated Ammonium Sulfate	466
TUULIKKI T. TERHO AND K. HARTIALA. A Method for Determination of the Sulphate Content of Glycosaminoglycans	471
FORBES W. ROBERTSON AND KIRSTEEN TAIT. Optimal Conditions for the Fluorometric Determination of DNA	477
J. A. BLAIR AND K. J. SAUNDERS. Preparation of Analogs of <i>dl</i> -Tetrahydromethotrexate (4-Amino-4-deoxy- <i>N</i> ¹⁰ -methyl- <i>dl</i> -5,6,7,8-tetrahydropteroyl-L-monoglutamic Acid)	482
M. DYMICKY, E. F. MELLON, AND J. NAGHSKI. A General, Highly Efficient Azeotropic Method of Esterification of Amino Acids	487
L. J. CARR, R. D. HIEBERT, W. D. CURRIE, AND C. T. GREGG. A Stable, Sensitive, and Inexpensive Amplifier for Oxygen Electrode Studies	492
L. J. CARR, J. H. LARKINS AND C. T. GREGG. A Multichannel Recording Oxygen Electrode Amplifier for Biochemical Studies	503
H. FURTHMAYR AND R. TIMPL. Characterization of Collagen Peptides by Sodium Dodecylsulfate-Polyacrylamide Electrophoresis	510
D. F. WEETMAN AND A. J. SWEETMAN. Realistic Estimations of Kinetic Constants for the Oxidation of Naturally Occurring Monoamines by Monoamine Oxidase	517
A. W. HODSON AND A. L. LATNER. An Automated Preparative Gel Electrophoresis Apparatus	522

R. H. C. STRANG AND H. S. BACHELARD. Rapid Enzymic Methods for Determination of the Specific Radioactivity of Metabolic Intermediates in Unpurified Brain Tissue Extracts . . .	533
ERICH E. BRUMBAUGH AND GARY K. ACKERS. Molecular Sieve Studies of Interacting Protein Systems. VII. Direct Optical Scanning Method for Ligand-Macromolecule Binding Studies	543
RUSTY JAY MANS AND CLAUDIA C. ALVAREZ. Gel Electrophoretic Assay for Trace Amounts of Ribonuclease	560
INGMAR LUNDQUIST AND JAN-OWE JOSEFSSON. Sensitive Method for Determination of Peroxidase Activity in Tissue by Means of Coupled Oxidation Reaction	567
RICHARD M. FOX. A Simple Incubation Flask for $^{14}\text{CO}_2$ Collection	578
J. R. JOICE AND H. G. KLEMPERER. Ion-Exchange Electrophoresis of Histone on Polyacrylamide Gel Containing Acrylic Acid .	581
D. A. COONEY, H. A. MILMAN, AND R. TRUITT. Disposable and Versatile Vessels for Microdiffusion Studies	583
AUTHOR INDEX	590
SUBJECT INDEX	592

